



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,877	12/27/2001	Makoto Yoshida	111580	9977

25944 7590 06/23/2004

OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

OMETZ, DAVID LOUIS

ART UNIT	PAPER NUMBER
----------	--------------

2653

DATE MAILED: 06/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/026,877

Applicant(s)

YOSHIDA ET AL.

Examiner

David L. Ometz

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply


A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 4-9 is/are withdrawn from consideration. 
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2653

1. This application contains claims 4-9 drawn to an invention nonelected with traverse in the reply filed on 1/15/04. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 3, 15 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 62-128011. JP'011 shows a thin film magnetic head on a slider 7 in figure 1 that has: a first magnetic film 2; a second magnetic film 3; a gap film formed between the first and second magnetic films; a coil film 1; and an insulating film 4 encapsulating the coil film 1; the forefronts of the magnetic films 2,3 are opposed via the gap layer; the magnetic films 2,3 are connected at the back region wherein the coil film 1 winds around the backward joined portion; a thermal diffusion film 9 made of a metallic film (same as the coil film 1) and integral with the coil film 1 so as to inherently radiate joule heat created in the coil film to the slider body 7 (i.e. since the slider body 7 is adjacent the diffusion film 9, some amount of heat radiating from the diffusion film 9 would inherently be absorbed by the slider body 7). The head supporting apparatus of claim 15 would be inherent for proper use of the thin film magnetic head disclosed by JP'011.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2653

5. Claims 10-14, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '011 in view of Fukuda et al (US Pat 6144533). JP'011 shows a thin film magnetic head in figure 1 as disclosed, *supra*. However, JP'011 does not show the inductive thin film magnetic head combined with an MR head in a merged/piggyback configuration nor does JP'011 disclose the use of the head in a disk drive as per claim 16. JP'011 also does not show a double layered coil with the diffusion film formed with each layer as claimed in claim 17. The reference to Fukuda et al shows a merged MR/inductive head in figure 1 that has a first shield 31, an MR element 33 (spin valve/tunnel junction), and second shield 212 wherein the head is used in a disk drive (see col. 1, line 13, and col. 5, lines 25-53). Fukuda et al also shows in figure 1 a double layered coil 24. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the inductive head of JP'011 into a merged MR/inductive head as taught by Fukuda et al as doing this would permit individual optimization of both the read head (MR, i.e. spin valve, tunnel junction, perovskite-type) and the write head (i.e. inductive) while also permitting efficient packaging by combining both on the same head chip. Secondly, with regard to the use of the merged MR/inductive head in a disk drive, one of ordinary skill in the art would have been motivated to use the merged MR/inductive head of JP'011 and Fukuda et al in a disk drive so as to permit large amounts of data to be stored and read by the merged head. The use of merged MR/inductive heads are old and well known in the art of disk drives as evidenced by the teachings of Fukuda et al.

Secondly, with regard to the double layered coil, as shown by Fukuda et al the use of double layered coils is common in the art of inductive heads. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the single

Art Unit: 2653

layered coil of JP'011 with the double layered coil of Fukuda et al as doing this would effectively double the amount of turns in the coil, thereby improving the response of the inductive head. Also, since JP'011 already shows diffusion films integrated with the single layered coil, one of ordinary skill in the art would have found it obvious to also add the diffusion film to the second layer in order to gain the same thermal benefits.

6. Applicant's arguments filed 4/12/04 and attached to paper number 11 have been fully considered but they are not persuasive. Applicant asserts on page 6 that JP'011 does not disclose the radiating of joule heat via the slider as instantly claimed. However, the examiner maintains that JP'011 inherently radiates joule heat created in the coil film to the slider body 7 since the slider body 7 is adjacent the diffusion film 9. Some amount of heat radiating from the diffusion film 9 would inherently be absorbed by the slider body 7, and then passed on to the surrounding ambient air adjacent the slider body. Therefore, the rejection is still deemed proper and has been maintained.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2653

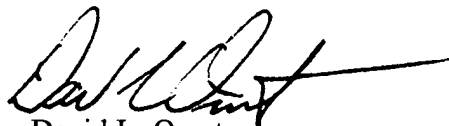
however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Ometz whose telephone number is (703) 308-1296.

The examiner can normally be reached on M-W, 6:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David L. Ometz
Primary Examiner
Art Unit 2653

DLO
6/22/04